Idaho Standard Operating Procedure

Breath Alcohol Testing

Idaho State Police
Forensic Services

Glossary

Approved Vendor: A source/provider/manufacturer of an approved premixed alcohol simulator solution shall be explicitly approved as a vendor of premixed alcohol simulator solutions for distribution within Idaho.

Breath Alcohol Test: A series of separate breath samples provided during a breath testing sequence.

Breath Alcohol Testing Sequence: A sequence of events as determined by the Idaho State Police Forensic Services, which may be directed by either the instrument or the Operator, but not both, and may consist of air blanks, performance verification, internal standard checks, and breath samples.

Breath Testing Specialist (BTS): An Operator who has completed an advanced training class taught by an employee of the Idaho State Police Forensic Services. BTS certification is valid for 26 calendar months and expires on the last day of the 26th month.

Certificate of Analysis: A certificate stating that the premixed ethyl alcohol solutions used for performance verification have been tested and approved for use by the ISPFS.

Certificate of Approval: A certificate stating that an individual breath alcohol testing instrument has been evaluated by the ISPFS and found to be suitable for forensic alcohol testing. The certificate bears the signature of an Idaho State Police Forensic Services Lab Manager, and the effective date of the instrument approval.

Changeover Class: A training class for currently certified personnel during which they are taught theory, operation, and proper testing procedure for a new make or model of instrument being adopted by their agency. Breath Testing Specialists attend BTS training that qualifies them to perform BTS duties related to the instrument.

Evidentiary Test: A breath test performed on a subject/individual for potential evidentiary or legal purposes. A distinction is made between evidentiary testing and community service or training tests performed with the instrument.

Idaho State Police Forensic Services (ISPFS): Formerly known as the Bureau of Forensic Services, the ISPFS is dedicated to providing forensic science services to the criminal justice system of Idaho. ISPFS is the administrative body for the breath alcohol testing program per IDAPA 11.03.01.

MIP/MIC: An abbreviation used to designate minor in possession or minor in consumption of alcohol.

Operator Certification: The condition of having satisfied the training requirements for administering breath alcohol tests as established by the ISPFS. Operator certification is valid for 26 calendar months and expires on the last day of the 26th month.

Operator: An individual certified by the ISPFS as qualified by training to administer breath alcohol tests.

Operator Class: An ISPFS-approved training class for prospective or uncertified breath alcohol Operators. Currently certified Breath Testing Specialists may teach Operator classes.

Performance Verification: A verification of the accuracy of the breath testing instrument utilizing a simulator and a performance verification solution. Performance verification should be reported to three decimal places. While ISPFS uses the term performance verification, manufacturers and others may use a term such as “calibration check” or “simulator check.”

Performance Verification Solution: A premixed ethyl alcohol solution used for field performance verifications. The solution is provided by and/or approved by ISPFS.

Recertification Class: A training class for currently certified personnel, completion of which results in uninterrupted continuation of their Operator or BTS status for an additional 26 months.

Waiting Period/Monitoring Period/Deprivation Period/Observation Period: 15-minute period prior to administering a breath alcohol test, in which an officer monitors the test subject/individual.

Breath Alcohol Standard Operating Procedure
List of Revisions

SOP Section	Topic	Date of Revision
2	Delete reference to ALS	June 1, 1995
2	0.02/0.20 solutions	June 1, 1995
3.2.1	Valid breath tests	October 23, 1995
2.1	Alco-Sensor calibration checks	May 1, 1996
2.2	Intoxilyzer 5000 Calibration Checks Effective June, 1996	May 1, 1996
2.1.2	0.003 agreement	June 1, 1996
2.1.2	Operators may run calibration checks	July 1, 1996
2.1.2	Re-run a solution within 24 hours	September 6, 1996
2.1	All 3 solutions run within a 24-hour period	September 6, 1996
2	All 3 solutions run within a 24-hour period	September 6, 1996
2.1.2	Re-running of a solution	September 26, 1996
2.1	All solutions run within a 48-hour period Reference to "three" removed	September 26, 1996 Oct. 8, 1996
2	All 3 solutions run within a 48-hour period	September 26, 1996
2	More than three calibration solutions	October 8, 1996
2	Solution values no longer called in to BFS	April 1, 1997
2.1	Alco-Sensor and Intoxilyzer 5000 calibration check	August 1, 1998
2.2	Calibration checks for the Intoxilyzer 5000	February 11, 1999
	Name change, all references made to the Bureau of Forensic Services were changed to Idaho State Police Forensic Services.	August 1999
1.6	Record Management	August 1, 1999
2	Deleted sections on relocating, repairing, recalibrating, and loaning of instruments from previous revision.	August 1, 1999

1.2, 2.1, 2.2	Alco-Sensor and Intoxilyzer 5000 calibration checks	August 1, 1999
3	Deleted sections on blood and urine samples for alcohol determination	August 1, 1999
1.6	Operator certification record management	January 29, 2001
1,2, and 3	Reformat numbering	
2.1, 2.2	Requirement for running 0.20 simulator solution	August 18, 2006
2.2.1.1.2.2	Changed 3-sample to "two print cards".	November 27, 2006
2.2.1.1.2.2	Deleted "simulator port" and "two print cards".	May 14, 2007
2.1.2.1 and 2.2.4	Simulator temperature changed from "should" to "must".	May 14, 2007
2.2.1.1.2.2	Clarification of 0.20 calibration checks.	September 18, 2007
1.2	Added the Lifeloc FC20	February 13, 2008
1.5	Deleted requirement that the new instrument utilize the same technology if the BTS is currently certified	February 13, 2008
2	Modified the accepted range for simulator solutions to +/- 10%, eliminating the +/- 0.01 provision. Added "Established target values may be different from those shown on the bottle label"	February 13, 2008
2.2	Added Lifeloc FC20 calibration checks Intoxilyzer 5000 calibration is now section 2.3	February 13, 2008
2.	Modified to specifically allow use of the 0.20 during subject testing	February 13, 2008
Sections 1, 2, 3	General reformat for clarification. Combined Alcosensor and Lifeloc sections. Specifically, changed calibration requirement using the 0.20 reference solution from four (4) checks to two (2).	December 1, 2008
2.1.4, 2.2.3, 2.2.4, 2.2.5 And 2.2.10	Clarification: a "calibration check" consists of a pair of samples in sequence and both samples must be within the acceptable range before proceeding with subject testing. A 0.20 solution should be replaced every 20-25 samples. Clarified the correct procedure for performing a calibration check.	January 14, 2009
2.1.3, 2.1.4.1, 2.1.9	Clarification: Added "*before and after*" to the 0.08 and 0.20 calibration checks, within 24 hours of a subject test. The official time and date of the calibration check is the time and date recorded on the printout, *or the time and date recorded in the log, whichever corresponds to the calibration check referenced in section 2.1.3 or 2.1.4.1.*	July 7, 2009

History Page

Revision #	Effective date	History
0	**8/20/2010**	The entire SOP was rewritten to incorporate language changes regarding performance verifications, and to clear-up ambiguities associated with the 0.20 verification and the relevance to cases not involving an 18-8004C charge. Scope and safety sections were added. Troubleshooting, MIP/MIC sections added.
1	**8/27/2010**	Deletions and/or additions to sections 2, 4.3.3, 4.4.1, 4.4.3, 4.4.5, 4.6.1.1, 5.1.2, 5.1.4, 5.1.4.1, 5.1.5, 5.2.4, 5.2.5, 6, 6.2.1, 6.2.3, 6.2.4, 7, 7.1, 7.1.1, 7.1.2, 7.1.2.2, 7.1.3, 7.1.4, 7.1.5, 8.

Table of Contents:

1 Quantitative Analysis for Alcohol in Breath by Approved Breath Testing Instruments.

2 Scope

This method describes the Idaho State Police Forensic Services (ISPFS) procedure, for use by agencies external to ISPFS, for the analysis of breath for the presence of volatile compounds using an approved breath testing instrument. This method provides for the quantitative analysis of ethanol.

Following all the recommendations of this external procedure will establish the scientific validity of the breath alcohol test. Failure to meet all of the recommendations within this procedure does not disqualify the breath alcohol test, but does allow for the questioning of the breath alcohol tests as it pertains to its foundation of admissibility in court. That foundation can be set, through testimony, by a breath testing specialist expert or ISPFS expert in breath testing as to the potential ramifications of the deviation from the procedure as stated.

3 Safety

Within the discipline of breath alcohol testing, the general biohazard safety precautions should be followed. This is due to the potential infectious materials that may be ejected from the mouth during the sampling of the breath. Caution should be taken so as the expired breath is not directed towards the officer or other unrelated bystander.

4 Instrument and Operator Certification

To ensure that minimum standards are met, individual breath testing instruments, Operators, and breath testing specialists (BTS) must be approved and certified by the Idaho State Police Forensic Services (ISPFS). The ISPFS will establish and maintain a list of approved instruments by manufacturer brand or model designation for use in the state.

4.1 **Approval of Breath Testing Instruments.** In order to be approved and certified each instrument must meet the following criteria:

4.1.1 The instrument shall analyze a reference sample or analytical test standard, the results of which must agree within +/- 10% of the target value or such limits set by ISPFS.

4.1.2 The certification procedures shall be adequate and appropriate for the analysis of breath specimens for the determination of alcohol concentration for law enforcement.

4.1.3 Any other tests deemed necessary to correctly and adequately evaluate the instrument to give accurate results in routine breath alcohol testing.

4.2 The ISPFS may, for cause, remove a specific instrument by serial number from evidential testing and suspend or withdraw certification thereof.

4.3 **Operators** become certified by completing a training class taught by an ISPFS certified Breath Testing Specialist (BTS). Certification is for 26 calendar months and expires the last day of the 26th month. Certification will allow the Operator to perform all functions required to obtain a valid breath alcohol test. It is the responsibility of the individual Operator to maintain their current certification; the ISPFS will not notify Operators that their certification is about to expire.

4.3.1 Recertification for another 26-month period is achieved by completing an ISPFS approved Operator class prior to the end of the 26th month.

4.3.2 If the individual fails to satisfactorily complete the class (including the written and practical tests), or allows their certification status to expire, he/she must retake the Operator class in order to become recertified.

4.3.3 If current Operator certification is expired, the individual is not certified to run evidentiary breath alcohol tests on the instrument in question until the Operator class is completed.

4.3.3.1 There are no grace periods or provisions for extension of Operator certification.

4.4 **Breath Testing Specialists (BTS)** are **Operators** who have completed an advanced training class and are ISPFS-certified to perform instrument maintenance, and provide both initial and recertification training for instrument Operators.

4.4.1 To obtain **initial** BTS certification, an individual must be currently certified as an Operator of that particular instrument. BTS certification is then obtained by completing an approved BTS training class.

NOTE: The prior Operator status "on that particular instrument" requirement is waived for new instrumentation.

4.4.2 BTS Certification is valid for 26 calendar months.

4.4.3 If BTS certification is allowed to expire, the individual reverts to certified Operator status for 12 calendar months for that instrument. He/she may no longer perform any BTS specific duties relating to that particular instrument.

4.4.4 BTS certification is renewable by attending an approved BTS training class.

4.4.5 The Idaho State Police Forensic Services may revoke BTS certification for cause. Examples of what may constitute grounds for revocation may include falsification of records, failure to perform required performance verification, failure to successfully pass a BTS recertification class and failure to meet standards in conducting Operator training.

4.5 **Adoption of a new instrument** by an agency will require updating any BTS and Operators in that agency in the use of the new instrument.

4.5.1 A currently certified **BTS** may become a certified BTS for a new instrument by completing an ISPFS approved BTS Instrumentation class.

4.5.2 A currently certified **Operator** may certify on a new instrument by completing an ISPFS approved Operator Instrumentation Class for the new instrument.

4.5.3 Individuals not currently certified as **Operators** must complete an Operator Class for each approved instrument.

4.6 **Record maintenance and management.** It is the responsibility of each individual agency to store performance verification records, subject records, maintenance records, instrument logs, or any other records as pertaining to the evidentiary use of breath testing instruments and to maintain a current record of Operator certification.

4.6.1 It is the responsibility of the agency to see that the said records are stored and maintained a minimum of (3) years in accordance with IDAPA 11.03.01.

4.6.1.1 Records may be subject to periodic audit by the Idaho State Police Forensic Services.

4.6.2 The Idaho State Police Forensic Services will not be responsible for the storage of such records not generated by ISPFS.

5. Performance Verification of Breath Testing Instruments

Performance verifications aid the Breath Testing Specialist (BTS) and the Idaho State Police Forensic Services (ISPFS) in determining if a breath testing instrument is functioning correctly. Performance verifications are performed using a wet bath simulator performance verification solution. The solution is provided by and/or approved by ISPFS. The ISPFS analysis establishes the target value and acceptable range of the solutions used for the verification and includes the acceptable values on the Certificate of Analysis for each solution. Note: The ISPFS established target values may be different from those shown on the bottle label.

5.1 Alco-Sensor and Lifeloc FC20–Portable Breath Testing Instrument Performance Verification

5.1.1 The Alco-Sensor and Lifeloc FC20 portable breath testing instrument performance verification is run using approximately **0.08** and/or **0.20** performance verification solutions provided by and/or approved by ISPFS.

5.1.2 The performance verification using the 0.08 and 0.20 performance verification solutions consist of two samples.

5.1.3 A performance verification of the Alco-Sensor and Lifeloc FC20 instruments using a 0.08 performance verification solution must be performed within 24 hours, before or after an evidentiary test to be approved for evidentiary use. Multiple breath alcohol tests may be covered by a single performance verification.

5.1.3.1 A 0.08 performance verification solution should be replaced with fresh solution approximately every 25 verifications or every calendar month, whichever comes first.

5.1.4 A 0.20 performance verification should be run and results logged once per calendar month and replaced with fresh solution approximately every 25 verifications or until it reaches its expiration date, whichever comes first

NOTE: The 0.20 performance verification was implemented for the sole purpose of supporting the instruments' results for an 18-8004C charge. Failure to timely perform a 0.20 performance verification will not invalidate tests performed that yield results at other levels or in charges other than 18-8004C.

5.1.4.1 The 0.20 performance verification satisfies the requirement for performance verification within 24 hours, before or after an evidentiary test at any level. The 0.20 performance verification solution should not be used routinely for this purpose.

5.1.5 Acceptable results for a 0.08 or 0.20 performance verification is a pair of samples in sequence that are both within +/- 10% of the performance

verification solution target value. Target values and ranges of acceptable results are included in a certificate of analysis for each solution lot series, prepared by, and available from, the ISPFS.

NOTE: Due to external factors associated with changing a performance verification solution the results of the initial performance verification may not be within the acceptable range, therefore the performance verification may be repeated until a pair of satisfactory results are obtained. However, if results after a total of three test series for any solution (equivalent to six tests) are still unsatisfactory, contact the appropriate ISPFS Laboratory. The instrument should not be used for evidentiary testing until the problem is corrected and performance verification results are within the acceptable range. The suggested troubleshooting procedure should be followed if the initial performance verification does not meet the acceptance criteria.

5.1.6 Temperature of the simulator must be between **33.5°C** and **34.5°C** in order for the performance verification results to be valid.

NOTE: The simulator may need to warm for approximately 15 minutes to ensure that the metal lid is also warm. If the lid is cold, condensation of alcohol vapor may occur producing low results.

5.1.7 Performance verification solutions should only be used prior to the expiration date on the label.

5.1.8 An agency may run additional performance verification solution levels at their discretion.

5.1.9 The official time and date of the performance verification is the time and date recorded on the printout, or the time and date recorded in the log, whichever corresponds to the performance verification referenced in section 5.1.3 or 5.1.4.1.

5.2 Intoxilyzer 5000/EN Performance Verification

Intoxilyzer 5000/EN instruments must have a performance verification with each evidentiary test. If the performance verification is within the acceptable range for the lot of solution being used, then the instrument will be approved and the resulting breath samples will be deemed valid for evidentiary use.

5.2.1 Intoxilyzer 5000/EN performance verification is run using 0.08 and/or 0.20 performance verification solutions provided by and/or approved by ISPFS.

5.2.2 During each evidentiary breath alcohol test using the Intoxilyzer 5000/EN, a performance verification will be performed as directed by the instrument testing sequence and recorded as SIM CHK on the printout. If the SIM

CHK is not within the acceptable range for the solution lot being used, the testing sequence will abort and no breath samples will be obtained.

5.2.3 A two sample performance verification using a **0.08 performance verification solution** should be run and results logged each time a solution is replaced with fresh solution. A 0.08 performance verification solution should be replaced with fresh solution approximately every 100 samples or every calendar month, whichever comes first.

5.2.4 A 0.20 performance verification should be run and results logged once per calendar month and replaced with fresh solution approximately every 25 verifications or until it reaches its expiration date, whichever comes first

NOTE: The 0.20 performance verification was implemented for the sole purpose of supporting the instruments' results for a 18-8004C charge. Failure to timely perform a 0.20 performance verification will not invalidate tests performed that yield results at other levels or in charges other than 18-8004C.

5.2.5 Acceptable results for a 0.08 or 0.20 performance verification is a pair of samples in sequence that are both within +/- 10% of the performance verification solution target value. Target values and ranges of acceptable results for each solution lot series are included in a certificate of analysis, prepared by, and available from, the ISPFS.

NOTE: Due to external factors associated with changing a performance verification solution the results of the initial performance verification may not be within the acceptable range, therefore the performance verification may be repeated until a pair of satisfactory results are obtained. However, if results after a total of three test series for any solution (equivalent to six tests) are still unsatisfactory, contact the appropriate ISPFS Laboratory. The instrument should not be used for evidentiary testing until the problem is corrected and performance verification results are within the acceptable range. Follow the suggested troubleshooting procedure if the initial performance verification does not meet the acceptance criteria.

5.2.6 The official time and date of the performance verification is the time and date recorded on the printout, or the time and date recorded in the log.

5.2.7 Performance verification solutions should only be used prior to the expiration date as marked on the label.

5.2.8 Temperature of the simulator must be between **33.5°C** and **34.5°C** in order for the performance verification results to be valid.

5.2.9 An agency may run additional performance verification solution levels at their discretion.

5.2.10 The BTS must set the correct acceptable range limits and performance verification solution lot number in the instrument before proceeding with evidentiary testing.

6. Evidentiary Testing Procedure

Proper testing procedure by certified Operators is necessary in order to provide accurate results. Instruments used in Idaho measure alcohol in the breath, not the blood, and report results as grams of alcohol in 210 liters of breath.

6.1 Prior to evidentiary breath alcohol testing, the subject/individual should be monitored for at least fifteen (15) minutes. Any material which absorbs/adsorbs or traps alcohol should be removed from the mouth prior to the start of the 15 minute waiting period. During the monitoring period the subject/individual should not be allowed to smoke, drink, eat, or belch/burp/vomit/regurgitate.

NOTE: If a foreign object/material is left in the mouth during the entirety of the 15 minute monitoring period, any potential external alcohol contamination will come into equilibrium with the subject/individual's body water and/or dissipate so as not to interfere with the results of the subsequent breath alcohol test.

6.1.1 The breath alcohol test must be administered by an Operator currently certified in the use of the instrument.

6.1.2 False teeth, partial plates, or bridges installed or prescribed by a dentist or physician do not need to be removed to obtain a valid test.

6.1.3 The Operator may elect a blood test in place of the breath alcohol test if there is a failure to complete the fifteen minute monitoring period successfully.

6.1.4 During the monitoring period, the Operator must be alert for any event that might influence the accuracy of the breath alcohol test.

6.1.4.1 The Operator must be aware of the possible presence of mouth alcohol as indicated by the testing instrument. If mouth alcohol is suspected or indicated, the Operator should begin another 15-minute waiting period before repeating the testing sequence.

6.1.4.2 If, during the 15-minute waiting period, the subject/individual vomits or regurgitates material from the stomach into the subject/individual's breath pathway, the 15-minute waiting period must begin again.

6.1.4.3 If there is doubt as to the events occurring during the 15 minute monitoring period, the officer should look at results of the duplicate breath samples for evidence of potential alcohol contamination. For clarification see section 6.2.2.2.

6.2 **A complete breath alcohol test includes two (2)** valid breath samples taken during the testing sequence and preceded by air blanks. The duplicate breath samples should be approximately 2 minutes apart to allow for the dissipation of potential mouth alcohol contamination.

NOTE: A deficient or insufficient sample does not automatically invalidate a test sample.

6.2.1 If the subject/individual fails or refuses to provide a duplicate, adequate sample as requested by the Operator, the single test result shall be considered **valid**.

6.2.1.1 The Operator may repeat the testing sequence as required by circumstances.

6.2.1.2 The Operator should use a **new mouthpiece** for each series of tests.

6.2.2 A third breath sample is required if the first two results differ by more than 0.02.

6.2.2.1 Unless mouth alcohol is indicated or suspected, it is **not** necessary to repeat the 15-minute waiting period to obtain a third breath sample.

6.2.2.2 The results for duplicate breath samples should correlate within 0.02 to indicate the absence of alcohol contamination in the subject/individual's breath pathway, show consistent sample delivery, and indicates the absence of RFI as a contributing factor to the breath results.

6.2.3 The Operator should log test results and retain printouts, if any, for possible use in court.

6.2.4 If a subject/individual fails or refuses to provide a duplicate, adequate sample as requested by the Operator, the results obtained are still considered valid by the ISPFS, **provided** the failure to supply the requested samples was the fault of the subject/individual and not the Operator.

6.2.5 If the second or third samples are lacking due to instrument failure, the Operator should attempt to utilize another instrument or have blood drawn.

7. Troubleshooting Procedure

Proper testing procedure by certified Operators is necessary in order to provide accurate results.

7.1 Performance verification: If, when performing the periodic performance verification, the instrument falls outside the limits of the verification, the troubleshooting guide should be used.

NOTE: This is a guide for troubleshooting performance verifications outside the verification limits and the procedure is recommended to streamline and isolate the potential cause of the problem. Strict adherence to the guidelines is not required.

7.1.1 The three sources of uncertainty when performing the periodic performance verifications are in the simulator setup and Operator technique, the simulator performance verification solution, and the instrument calibration itself.

7.1.2 If the first performance verification is outside the verification limits, the simulator setup and technique of the Operator performing the verification should be evaluated. The simulator should be evaluated to ensure that it is hooked up properly, uses short hoses, is properly warmed, is within temperature, the Operator blow technique is not too hard or soft, and that the Operator does not stop blowing until after the sample is taken.

7.1.2.1 The performance verification should be run a second time

7.1.2.2 If the performance verification is within the verification limits on the second try, the instrument passes the performance verification.

7.1.3 If the second performance verification is outside the verification limits, then the performance verification solution should be evaluated next.

7.1.3.1 The performance verification solution should be changed to a fresh solution.

7.1.3.2 The solution should be warmed for approximately 15 minutes, or until the temperature is within range, and the simulator lid is as warm as the simulator jar.

7.1.3.3 The performance verification may then be repeated.

7.1.4 If the third performance verification is outside the verification limits, the instrument must be taken out of service and sent to the ISPFS or an approved service provider.

7.1.5 Upon return from service, the instrument should be recertified by ISPFS before being put back into service.

7.2 Thermometers:

7.2.1 If a bubble forms in the thermometer, the Operator or BTS can place the thermometer in a freezer to draw the mercury (or equivalent) into the bulb of the thermometer. This should disperse the bubble.

8. MIP/MIC Procedure

The previous version of this section has been withdrawn from publication and will be replaced by an updated version that is pending statutory and legal review. Please disregard and destroy any copies of the previous version of this section.